JA

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,301	09/09/2003	Mark W. Lehnert	SXS-100-B	2135

7590 03/25/2005

Thomas D. Heimholodt
Young & Basile, P.C.
Suite 624
3001 West Big Beaver Road
Troy, MI 48084

EXAMINER	
CHUKWURAH, NATHANIEL C	
ART UNIT	**PAPER NUMBER**
3721	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary	Application No.	Applicant(s)	
	10/658,301	LEHNERT ET AL.	
	Examiner	Art Unit	
	Nathaniel C. Chukwurah	3721	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,14-28 and 30-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,16-28,30 and 32-39* is/are rejected.

7)☒ Claim(s) *15, 31 and 40* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15, 31 and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 15, 31 and 40, the phrase "all internal metering" in line 3, is unclear as to what "internal metering" applicant is referring to.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 12, 14, 17, 28, 30 and 33-39 rejected under 35 U.S.C. 103(a) as being unpatentable over McKendrick (US 4,644,848) in view of Tambini et al. (US 5,592,396).

With regard to claim 1, McKendrick discloses an apparatus (10) for controlling an impact tool comprising: an inlet port (36), a fluid (compressed air) pressure regulator (16, 24) for maintaining a selectable pressure value (see col. 3, lines 53-68), a central processing unit (48 microprocessor) for receiving output signal from the sensor (42) in accordance with a program stored in the memory and a supply hose (fluid passage means 38).

McKendrick lacks a sensor for measuring corresponding flow of differential pressure; however, Tambini et al. teaches a torque monitoring system (20) having a sensor (36) generating an output signal to measure flow of at least one of differential pressure. Therefore, it would have been obvious to one skilled in the art to provide the apparatus of McKendrick with a sensor for measuring differential pressure in order to indicate when the condition of an impact tool changes (col. 6, line 3).

With regard to claim 12, McKendrick shows an output port (34) for supplying controlled fluid.

With regard to claim 17, McKendrick shows a method steps for receiving a supply of pressurized fluid through inlet port (36), maintaining a selectable pressure value with a fluid (compressed air) pressure regulator (16, 24) (see col. 3, lines 53-68), measuring a flow of differential pressure with a sensor (42)(see col. 4, lines 1-6), receiving output signal from the sensor (42) with a central processing unit (48 microprocessor) in accordance with a program stored in the memory and a supply hose (fluid passage means 38).

With regard to claim 28, McKendrick shows a method steps of supplying controlled fluid through an output port (34).

With regard to claims 14 and 30, McKendrick shows a method of providing pressurized compressed air.

With regard to claim 33, McKendrick discloses an apparatus (10) for controlling an impact tool comprising: an inlet port (36), a fluid (compressed air) pressure regulator (16, 24) for maintaining a selectable pressure value (see col. 3, lines 53-68), a sensor (42) for measuring a

flow of differential pressure (see col. 4, lines 1-6), a central processing unit (48 microprocessor) for receiving output signal from the sensor (42) to control fluid to the tool.

With regard to claim 34, McKendrick discloses an apparatus (10) for controlling an impact tool comprising: an inlet port (36) connectible to a supply of pressurized fluid; means (16, 24) for monitoring fluid to tool and means (48) for analyzing the tool process.

With regard to claim 35, McKendrick shows means (central processing unit) for comparing fluid flow.

With regard to claim 36, McKendrick shows at least one of differential pressure (col. 4, 1-6).

With regard to claim 37, McKendrick discloses an apparatus (10) for controlling an impact tool comprising: means (16, 24 pressure regulator) for monitoring fluid to tool, means (control system) for determining tool process validity.

With regard to claim 38, McKendrick shows central processor (48) for comparing monitored fluid flow.

With regard to claim 39, McKendrick shows at least one of differential pressure (see col. 4, lines 1-6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 4, 6, 7, 9, 18, 20 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKendrick in view of Tambini et al. as applied to claims 1 and 17 and further inview of Lysaght (US 6,055,484).

With regard to claims 2, 8 and 18, Modified McKendrick is silent about setup process for each fastener tightening cycle to be learned. However, Lysaght teaches such setup process for each fastener tightening cycle to be learned (see abstract). Therefore, it would have been obvious to one skilled in the art to provide the program of McKendrick with setup process for each fastener tightening cycle to be learned in order to determine when the output pressure precisely corresponds with the desired output pressure which has been called for by the computerized control (col. 2, lines 34-37).

With regard to claim 4, Modified McKendrick does not expressly state that the central processing unit receives a torque value input by a manual torque wrench. McKendrick teaches manual pressure regulator (28) for initially reducing the pressure of fluid applied to the inlet the transducer, therefore, McKendrick's central processing unit (48) is capable of such functions as receiving a torque value input by a manual torque wrench.

With regard to claims 6 and 7, Modified McKendrick does not expressly state that the central processing unit receives signal from the sensor during a free air run process or receives output signal from a sensor during a rehit cycle for setting a threshold value;

McKendrick teaches that the pressurized air applied to the tool (14) is proportionally corresponds to the value of the signal delivered through the condutor (44) to the tranducer (16) (col. 4, lines 4-6), therefore, McKendrick's central processing unit (48) is capable of such functions as in claims 6 and 7.

With regard to claim 9, McKendrick shows central processing unit receives output signal from a sensor during tightening cycle, and compares output signal bench marks stored in memory; and comparing output signal bench marks stored in the memory (see col. 2, lines 30-41).

With regard to claim 20, Examiner takes Official Notice that inputting torque value using manual torque wrench with the central processing unit is well known in the art.

With regard to claim 22, McKendrick does not expressly state that the central processing unit receives output signal from a sensor during a free air run process; and setting a threshold value; however, McKendrick's central processing unit (48) is capable of such functions.

With regard to claim 23, Modified McKendrick does not expressly state that the central processing unit receives output signal from a sensor during a tightened fastener a rehit cycle with central processing unit; and setting a threshold value; however, McKendrick's central processing unit (48) is capable of such functions.

With regard to claim 24, Modified McKendrick does not expressly state that a control program is run for each fastener tightening cycle; however, McKendrick's central processing unit (48) is capable of such functions.

With regard to claim 25, McKendrick shows the central processing unit receives output signal from a sensor during tightening cycle, and compares output signal bench marks stored in memory (see col. 2, lines 30-41).

Claims 3, 5, 16, 19, 21 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKendrick in view of Tambini et al. and Lysaght and further in view of Whitehouse (US 5,315,501).

With regard to claims 3, 5, 16, 19 and 21, McKendrick shows the central processing unit (48) receiving torque signal from transducer (16, 24). McKendrick fails to show transducer connected between the tool and the fastener. Whitehouse teaches a transducer (32 fig. 1) connectible between the tool (20) and the fastener (44). Therefore, it would have been obvious to one skilled in the art to at the time of the invention to provide the apparatus of McKendrick with a transducer connectible between the tool and the fastener as taught by Whitehouse in order to provide the same benefit as discussed in Whitehouse.

With regard to claim 32, McKendrick shows the central processing unit (48) receiving torque signal from transducer (16, 24). Modified McKendrick fails to show transducer connected between the tool and the fastener. Whitehouse teaches a transducer (32 fig. 1) connectible between the tool (20) and the fastener (44). Therefore, it would have been obvious to one skilled in the art to at the time of the invention to provide the apparatus of McKendrick with a transducer connectible between the tool and the fastener as taught by Whitehouse in order to provide the same benefit as discussed in Whitehouse.

Claim 10, 11, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKendrick in view of Tambini et al. and further in view of Bickford et al. (US 4,864,903).

With regard to claim 10, Modified McKendrick apparatus and method lacks an error proofing program for each fastener tightening cycle.

Bickford et al. teaches an error proofing program for each fastener tightening cycle (col. 3, lines 33-35).

Therefore, it would have been obvious to one skilled in the art to provide the modified the program of McKendrick with an error proofing program for each fastener tightening cycle in

order to obtain the significant advantages of faster operation of the wrench, eliminate or reduce operator error, more reliable and accurate operation of the wrench to impose the desired torque on the fastening element and ability to obtain a documented history of the tightening of the fastener (Bickford et al. col.3, lines 32-37).

With regard to claim 11, Modified McKendrick does not expressly state that the central processing unit receives output signal from a sensor during tightening cycle, and compares output signal bench marks stored in memory; however, McKendrick is capable of comparing output signal bench marks stored in the memory (see col. 2, lines 30-41).

With regard to claim 26, Modified McKendric method lacks an error proofing program for each fastener tightening cycle. Bickford et al. teaches an error proofing program for each fastener tightening cycle (col. 3, lines 33-35).

Therefore, it would have been obvious to one skilled in the art to provide the modified the program of Modified McKendrick with an error proofing program for each fastener tightening cycle in order to obtain the significant advantages of faster operation of the wrench, eliminate or reduce operator error, more reliable and accurate operation of the wrench to impose the desired torque on the fastening element and ability to obtain a documented history of the tightening of the fastener (Bickford et al. col.3, lines 32-37).

With regard to claim 27, Modified McKendrick shows central processing unit receives output signal from a sensor during tightening cycle, and compares output signal bench marks stored in memory; and comparing output signal bench marks stored in the memory (see col. 2, lines 30-41). Modified McKendrick lacks method of an error proofing program.

Bickford et al. teaches an error proofing program for each fastener tightening cycle (col. 3, lines 33-35).

Therefore, it would have been obvious to one skilled in the art to provide the modified the program of McKendrick with an error proofing program for each fastener tightening cycle in order to obtain the significant advantages of faster operation of the wrench, eliminate or reduce operator error, more reliable and accurate operation of the wrench to impose the desired torque on the fastening element and ability to obtain a documented history of the tightening of the fastener (Bickford et al. col.3, lines 32-37).

Allowable Subject Matter

Claims 15, 31 and 40 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathaniel C. Chukwurah whose telephone number is (703) 308-6385. The examiner can normally be reached on M-F 6:00AM-2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rinaldi Rada can be reached on (703) 308-2187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nc

February 3, 2005

LOUIS K. HUYNH
PRIMARY EXAMINER